

WHAT IS CLAIMED IS:

1. A method for determining an emission source, said method comprising the steps of:
measuring concentrations of an emitted material at a single measurement point;
measuring changes in wind velocity over time;
performing spatial temporal analysis of said concentration measurements;
generating one or more wind vectors based on said measured changes in wind velocity;
collating said measured concentrations with said wind vectors to generate an emissions plot; and
defining boundaries for one or more plumes on said emissions plot wherein said one or more plumes are indicative of an emission source.
2. The method as claimed in claim 1, wherein said changes in wind velocity are measured independently of said single measurement point.
3. The method as claimed in claim 1, wherein said single measurement point comprises a single sensor positioned any distance from a potential emission source.
4. The method as claimed in claim 2, further including the step of superimposing a known emission concentration on said sensor during a monitoring cycle, so that sensitivity of said sensor is enhanced.
5. A method for determining a source of an emission, said method comprising the steps of:

measuring concentrations of an emission at a single measurement point;
measuring changes in wind velocity over time;
performing spatial temporal analysis of said concentration measurements;
generating one or more wind vectors based on said measured changes in wind velocity;
generating a trajectory for the emission based on said measured emission concentrations
and said wind vectors;
projecting back along said trajectory and correlating one or more points along said
trajectory as sources of a possible emission; and
validating one of said points as the source of the emission.

6. The method as claimed in claim 5, further including the step of generating another
trajectory based on emission concentrations measured at another location, and said step of
validating comprising taking points in agreement on both of said trajectories.

7. The method as claimed in claim 5, wherein said single measurement point comprises a
single sensor positioned any distance from a potential emission source.

8. The method as claimed in claim 7, further including the step of superimposing a known
emission concentration on said sensor during a monitoring cycle, so that sensitivity of said
sensor is enhanced.

9. A method for determining a source of an emission, said method comprising the steps of:
measuring concentrations of an emission at a single measurement point;

measuring changes in wind velocity over time;
performing spatial temporal analysis of said concentration measurements;
generating one or more wind vectors based on said measured changes in wind velocity;
generating two or more trajectories for the emission based on said measured emission concentrations and said wind vectors;
overlapping said two or more trajectories to provide an area of overlap; and
determining the source of the emission from said overlap area.

10. The method as claimed in claim 9, further comprising the step of validating said emission source in said area of overlap.

11. The method as claimed in claim 9, wherein said step of measuring concentrations of an emission comprises taking measurements from a sensor that is moving to produce a plurality of measurements at different locations.

12. The method as claimed in claim 9, wherein said step of measuring comprises positioning a plurality of sensors in a spaced relation at locations about a facility.